

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number  
**WO 2005/068645 A3**

(51) International Patent Classification<sup>7</sup>: **C07K 14/47,**  
14/00, A61K 6/033, 7/16

(21) International Application Number:  
PCT/EP2004/013549

(22) International Filing Date:  
29 November 2004 (29.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004/0028 19 January 2004 (19.01.2004) BE

(71) Applicant and

(72) Inventor: **HUYBRECHTS, Lucas** [BE/BE]; Mina Tel-  
ghuislaan 9, B-2550 Kontich (BE).

(81) Designated States (*unless otherwise indicated, for every  
kind of national protection available*): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (*unless otherwise indicated, for every  
kind of regional protection available*): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,  
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

(88) Date of publication of the international search report:  
10 November 2005

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

WO 2005/068645 A3

(54) Title: **ANTICARIOGENIC PROTEINS & PEPTIDES & SACCHARIDES**

(57) Abstract: This Invention discloses new proteins, peptides and saccharides that have anticariogenic capabilities and that are characterized by the presence of one or more components that have the ability to form a complex with calcium ions: such as epsilon-polylysine that is conjugated with one or more bisphosphonyl-, biscalboxyl-, or 3-hydroxy-phthalate-groups or conjugated with casein phosphopeptide, phosvitin or with partially hydrolyzed phosvitin; such as partially hydrolyzed chitosan that is conjugated with one or more bisphosphonyl groups, casein phosphopeptide or with phosvitin or partially hydrolyzed phosvitin; such as bisphosphonylated and biscalboxylated proteins with at least 40% of amino acids consisting of lysine and a molecular weight of above 2 kD and such as polymerized casein phosphopeptide and partially hydrolyzed phosvitin. The products can be used in formulations to protect teeth and to treat the oral cavity. The Invention encompasses competent protein, peptide and saccharide structures, as well as production procedures and application conditions.